Artur Kijak
Humanitas University, Sosnowiec

On recent trends in phonology: some developments of labials and velars in English and Polish

Abstract
This paper presents two phonological models subjectively selected by the author: Element Theory and CVCV. The presentation is based on two phenomena from English and Polish. First, we look at the phonological relationship between two articulatorily unrelated consonant classes: velars and labials in English. Then we focus on one example of glide obstruentization in Slavic, the case of the historical [w] > [v/f] shift.

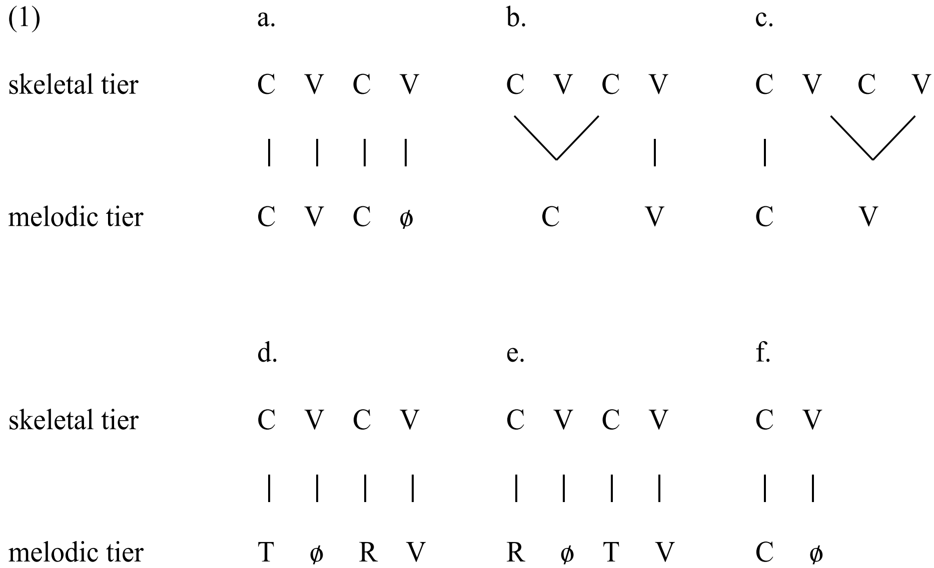
Keywords: Element Theory, CVCV, labials, velars, glide obstruentization

The present paper was conceived of as, first and foremost, informative, and only secondly, analytic in nature. Its main aim is to introduce and briefly outline current phonological thought on the example of two recent theoretical models. The choice is purely subjective and was guided by the author's own preference and interests. This selective approach cannot be surprising especially in times of linguistic boom, where dozens of theories fight for dominance and develop so rapidly that one can hardly keep up with the pace. Rather sadly then, in what follows we focus on Element Theory and CVCV only, bearing in mind that there is plenty of other rival models we will not have a chance to mention let alone discuss like, for instance, Lexical Phonology or Optimality Theory. Moreover, due to space limitations the introduction of the two models is maximally reduced but frequently supplemented with information about other more comprehensive sources. The paper is organized as follows: section 1 introduces the fundamentals of two theoretical models: Element Theory and CVCV. Section 3 and 4 illustrate the practical capacity of the two models on a concrete material. Section 3 briefly discusses a close phonological relationship between labials and velars in English and section 4 looks at the obstruentization of the glide [w] in Polish. The data is not new and the discussion draws on some earlier analyses (Kijak, 2014, section 3 and Cyran, 2013, section 4). This strategy is dictated by the aforementioned informative nature of the article which focuses not only on the potential of recent models but also on their weak points still awaiting the amendment. The paper ends in a short conclusion.

1. Phonological models

1.1 CVCV

In its long history, Generative Phonology (Chomsky & Halle, 1968) witnessed, at least, two fundamental turns which left permanent imprints on later development of the theory. Unquestionably, a giant step forward was the abandonment of the linear vision of the phonological representation. It was replaced with a multi-tired or non-linear representation in which separate levels interact with one another. In the 80' and 90's the theory took another great leap forward, that is, the excessive generative power of the rewrite-rule model has been tamed. In consequence, the ordered phonological rules gave way to universal principles and language-specific constraints. Along with the revolution in syllable structure, we can observe a shift in the representation of the internal structure of phonological segments. The standard binary phonological features are gradually being supplanted by privative elements. While the former were based on articulation and, to a lesser extent, perception, the latter refer to the acoustic signal shared by both speaker and listener. The idea of the privative character of elements was accepted and developed by Dependency Phonology (Anderson & Ewen, 1987) and Particle Phonology (Schane, 1984) the immediate predecessors of Government Phonology (Kaye, Lowenstamm, & Vergnaud, 1985). It was the latter model, however, which came up with what was once known as a theory of charm and government (Kaye, Lowenstamm, & Vergnaud, 1985) and later, after numerous modifications, renamed as Element Theory (Backley, 2011). The CVCV model (also known as Strict CV) (Lowenstamm, 1996, Scheer, 2004) evolves directly from Government Phonology and as such is set, as its immediate predecessor, in generative tradition. It was devised as a non-linear and non-derivational model. CVCV dispenses with branching constituents altogether and views syllable structure as strictly alternating sequences of non-branching onsets and non-branching nuclei. There is simply no rhymes and no codas. In order to clarify the points just mentioned, consider the examples in (1) below which illustrate the CVCV representation of some traditional structures: closed syllables (1a), geminates (1b), long vowels (1c), branching onsets (1d), coda-onset contacts (1e) and word-final consonants (1f). The 'C' and 'V' on the melodic tier stand for any consonant and any vowel respectively, the 'TR' represents a typical traditional branching onset, that is, an obstruent followed by a sonorant.



The representations under (1) demonstrate that the traditional branching onsets are reanalysed as two onsets separated by an empty nucleus (1d). Similarly, coda-onset clusters are represented as two onsets with an empty nucleus in between (1e)[1]. Geminates are interpreted as consisting of two consonantal positions with the intervening empty nucleus (1b). This extreme segmentation of the traditional syllabic constituents means, among many other things, that empty positions must play an indispensable role in this model. Note that each consonant cluster is separated by the empty nuclear position and word-final consonants are not final at all but followed by the empty nucleus. One of the conditions on the distribution of empty nuclei in phonological representation precludes a situation in which empty positions occur in sequences. For instance, Cyran (2010) proposes a constraint disallowing two consecutive empty nuclei (*ø–ø). Extreme segmentation is dictated by yet another principle which says that within the phonological word prosodic licensing is distributed by nuclear positions. It follows that at the skeletal level each consonantal position (C) must be licensed by a vocalic one (V).

In the CVCV model syllabification follows from the asymmetrical relations between two segments. Thus in a sequence of an obstruent (T) and a sonorant (R) both consonants contract a dependency relation where the more complex segment

[1] It is crucial for any theory of the syllable structure to recognize the difference between branching onsets and coda-onset contacts. In CVCV the difference lies in the direction and character of the governing relation which is contracted between consonants, see (Cyran, 2010).

(the governor) governs a less complex one (the governee)[2]. We should bear in mind that the governing relations between consonants are contracted across melodically empty nuclei. Such nuclei, as locked within governing relations, are not visible to phonological processes and do not violate the constraint on sequences of empty nuclei (*ø–ø). For a meticulous discussion and presentation of the CVCV model, along with the comparison with other theories (including Government Phonology) the reader is referred to, for example, Szigetvári (1999), Rowicka (1999), Cyran (2003), and Scheer (2004).

1.2 Element Theory

In Element Theory (ET) phonological segments are built out of privative cognitive units called elements. Elements differ from the traditional features in that they are linked to the acoustic signal rather than to articulation and/or perception. At the same time, however, they function as "abstract units of phonological structure which carry linguistic information about segments" (Backley, 2011:7). Another difference between elements and features is that the former, unlike the latter, are large enough to be phonetically interpretable when they occur alone in a segment. The only condition an element is required to satisfy in order to be pronounced is that it must be linked to a skeletal slot. This autonomous interpretability can be illustrated on the example of a single element |I|. When linked to a nuclear slot, it is realized as the vowel [i], but when it is attached to the consonantal position, it is pronounced as the glide [j].

Crucially, elements may combine with one another and appear together in a single segment forming complex structures. For example, the two mid vowels [e] and [o] are combinations of |AI| and |AU| respectively. In yet richer vocalic systems maintaining the opposition between lax and tense vowels, it is headedness that is utilized to mark this contrast. Thus, a single-element tense vowel [i] is represented as headed |$\underline{\text{I}}$|, while its lax counterpart [ɪ] as headless |I_|. A similar asymmetric head-operator relation is found in the phonological compounds of closed and open mid vowels, that is, [e] and [ɛ] respectively. Thus, a headless compound |AI_| defines the open mid vowel [ɛ], the same compound headed by |I|, that is, |A$\underline{\text{I}}$| refers to the closed mid vowel [e]. Note that in such a system the front open vowel [æ] can be represented by the same compound headed by the element |A|, which yields |I$\underline{\text{A}}$|. Moreover, it is generally believed that the same elements which are used to describe vocalic systems are also active in consonants. It means that the three resonance elements |I|, |A|, |U| defining vocalic segments are active place definers in consonantal systems. However, in order to describe consonants some additional primes

[2] Segments are composed of elements and complexity is gauged from the number of elements a given segment contains (see the discussion in 2.2 below).

are required and these are |L|, |H| and |ʔ|. It does not mean, however, that the latter cannot occur in a vocalic expression. Quite the contrary, in some vocalic systems they represent nasalization or tones.

The internal structure of segments may be affected by the position these segments occupy in the syllable structure. The elemental make-up of a segment may be altered by adding a locally present element or by reducing the internal composition of a segment. The latter can be illustrated by spirantisation, a process often resulting in elision and involving the lenition of a stop to a glottal fricative, usually through a fricative stage, e.g. [t] > [s] > [h] > [ø] = |AHʔ| > |AH| > |H| > |_|. Similarly, in vowel reduction the elemental material is stripped away or the element status is reduced from head to operator, e.g. [o] > [u] = |AU| > |U| and [i] > [ɪ] = |I̲| > |I_| respectively.

In a nutshell, vocalic as well as consonantal segments are composed of the same elements which may be affected by the position they occupy in the syllable structure.[3]

2. Love triangle (Kijak, 2014)

The chief aim of this section is to provide a considerable amount of data illustrating a close phonological relationship between two articulatorily unrelated segment classes: velars and labials. This intimate relationship has been made public by, among others, Backley & Nasukawa (2009:6) who point out that the UPSID database (UCLA Phonological Segment Inventory Database) records 60 languages with labialized velars but only 2 with labialized coronals. The second, not less important, aim is to find out whether new theoretical models like, for instance, Element Theory and CVCV, can cope with the presented facts any better than the traditional, SPE-like frameworks. The discussion proposed here draws heavily on the analysis put forward in Kijak (2014) who advocates the solution according to which both labials and velars contain the same resonance element |U| and hence interact phonologically on a massive scale.

It has been a long time since the phonological relationship between labials and velars was noticed – descriptions and analyses of cross-linguistic data have been accumulated in phonological literature at least since Jakobson and Halle (1956). For instance, examples of the labial-velar relationship can be found in Hickey (1984, 1985) Old Irish, Rumanian and Germanic languages, Durand (1990) Finnish, Brown (2006) Spanish dialects, Backley and Nasukawa (2009) Germanic, Bantu, Romance languages, Scheer (2004) and Huber (2007) various languages, among others. Despite the abundance of descriptions available to researchers, the efforts to formally capture this phonological similarity have yet remained unsuccessful. The inability to explain the relationship became evident quite early, especially in

[3] For more information and an ongoing discussion concerning the elemental make-up of phonological segments see, for example, Harris and Lindsey (1995), Ploch (1999), Scheer (2004), Bloch-Rozmej (2008), Cyran (2010) and Backley (2011), among others.

traditional articulation-based models of segmental structure (Chomsky & Halle, 1968). Without going into detail, the feature specification used by SPE to define velars and labials as respectively [–ant +high] and [+ant –high] makes it difficult, if not impossible, to relate the two classes. It must be noted here that well before the publication of Chomsky & Halle's (1968) seminal work, Jakobson & Halle (1956) postulated the acoustic feature [grave] which was thought to represent common acoustic properties of labials and velars. This feature simply related to a concentration of acoustic energy at the lower end of the spectrum.[4] Acoustic features, however, were systematically abandoned when a new, articulatory-oriented, model of segmental structure appeared on a phonological scene – Chomsky & Halle's (1968) SPE framework. Since then, a quest to explain the phonological intimacy between velars and labials has been undertaken by researchers working in various theoretical frameworks (Scheer, 2004:49ff). In Element Theory both categories are represented by different primes (Kaye *et al.*, 1985, 1990, Harris and Lindsey, 1995). In short, labials, together with the labio-velar glide [w] and the high back vowel [u], contain the element |U|. Velars, on the other hand, are proposed either to be represented by a neutral element (Harris & Lindsey, 1995:29) or they are simply empty-headed, i.e. they do not contain any resonance element at all (Huber, 2007, Cyran, 2010). Recently, however, these solutions have been undermined by researchers aiming to establish a direct relationship between the two categories, e.g. Broadbent (1996), Scheer (2004), Backley & Nasukawa (2009) and Backley (2011). For example, Backley & Nasukawa (2009) argue for the presence of the element |U| in the content of both velars and labials. What differentiates both categories is the status played by this element, i.e. in labials |U| functions as the head, while in velars it is an operator. This proposal is based on spectrograms which reveal the presence of a falling spectral pattern identifying both labial and velar resonance (Backley & Nasukawa, 2009:7). In what follows, we apply this solution to selected examples of the velar-to-labial changes in the history of English.

2.1 Velar-to-labial developments

In the history of English there are a multitude of processes which bring together labials, velars, the high back vowel [u] and the glide [w]. This relationship can be illustrated on the example of the *u*-glide development in front of the velar spirant in Old English (OE), e.g. *furh > furuh* 'furrow'. However, it is Middle English (ME) that provides us with a plethora of examples revealing the triangular relationship between velars, labials and [u, w]. For example, one of a large-scale developments operating in that period was diphthongization before the velar fricative. It was pre-

[4] Some earlier attempts to formally capture the similarity between velars and labials have been discussed in Backley & Nasukawa (2009), see also Huber (2007).

ceded, in the case of the voiced velar fricative [ɣ], by the vocalization of the fricative, e.g. OE *dragan* > ME *dragen* > *drawen* 'draw', OE *boga* > ME *bohe, bowe* 'bow', OE *nāht* > ME *nauhte* 'naught', OE *dohtor* > ME *dohter* > *douhter*, *doughter* 'daughter' and OE *dāh* > ME *dōh* > *dough* 'dough'. Interestingly, the same vowels met an identical fate in yet another context, that is, in front of the glide [w], e.g. OE *sāwol* > ME *saul* 'soul' or OE *glōwan* > ME *glowen* 'glow'. Towards the end of ME the velar fricative tends to be eliminated from the segmental inventory of the language, e.g. in the final position it is labialized to [f] as in *laughen* > *laugh*, *laffe* 'laugh', *rough* > *rouf*, *ruff* 'rough' and *ynough* > *enoff* 'enough'. Finally, the triangular relationship is also exemplified by the 15th century vocalization of the velarized lateral [ɫ]. It led to various qualitative and quantitative vocalic developments like, for example, diphthongization, e.g. *balk* > *baulke* 'baulk, balk' and *bolster* >*boulster* 'bolster'. In what follows we concentrate only on two examples of the velar-to-labial change, that is, *u*-glide development in OE and the vocalization of the velarized lateral in ME.[5]

The disappearance of the velar fricative from English was triggered by a sequence of processes dating back to Late OE (Hogg, 1992). In (2) we present some examples adopted from Wełna (1978:51) illustrating the vowel/glide development before the velar fricative. This change may be considered as a first step to the loss of the velar fricative in later forms.

(2)

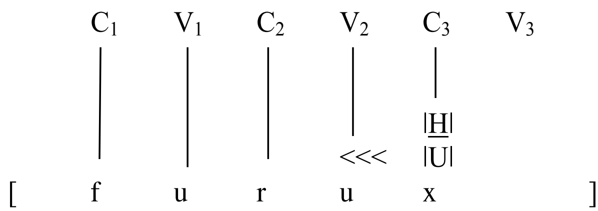
furh	>	furuh	*furrow*
burh	>	buruh	*borough*
þurh	>	þuruh	*thorough*
holh	>	holuh	*hollow*
mearh	>	mearuh	*marrow*

In (2) the forms on the left contain liquid+velar fricative consonant clusters which get broken by the *u*-glide. Since the ME spelling of some of these forms is unstable, e.g. *furgh*, *forough*, *forwe* 'furrow', *burgh*, *burw* 'borough', and *thorugh*, *thorowe* 'thorough', we can hypothesize that the phonetic realization of the velar fricative fluctuated for some time between [u], [w] and [x]. Note that if we accept the solution that both velars and labials contain the element |U|, the development in (2) and the spelling variants can be given a straightforward explanation. It is the velar fricative which is a donor of the element |U| interpreted as [w] or [u] depending on the constituent affiliation. Moreover, in the CVCV model consonant clusters are always separated by the empty nuclear slot, and similarly word-final consonants are not final but followed by the empty nucleus (see 2.1 above). Since nuclei license

5 For more examples of the velar-to-labial changes see Bonebrake (1979) and Kijak (2014).

preceding consonants, it means that word-final consonants are in a weak position. They are licensed by the empty nucleus. It follows that the velar fricative in (2) occurs in a typical lenition site and as a consequence it evacuates some of its material to a preceding V_2 position. This is illustrated in (3).

(3) furh > furuh



In order to avoid delinking and in consequence element loss, the velar fricative[6] in (3) seeks stability by spreading to the preceding nuclear slot V_2. The evacuated material is realized as a high back vowel [u] which is a typical interpretation of the element |U| in the nuclear slot. Besides the diphthongization processes before velar fricatives briefly mentioned above, ME witnessed another change leading to the appearance of new diphthongs. This process boils down to the development of a transition glide [u] between a back vowel and the velarized lateral [ɫ][7]. Consider some examples in (4) below.

(4) ME diphthongization before [ɫ] (Wełna 1978:192ff)

a.	ME [a] + [ɫ] > LME [au] + [ɫ]			b.	ME [o, u] + [ɫ] > LME [ɔu] + [ɫ]	
alter	>	aulter	*altar*	colte	> coult	*colt*
malt	>	mault	*malt*	gold	> gowlde	*gold*
falle	>	faul	*fall*	shuldre	> shoulder	*shoulder*
walke	>	w[aulk]	*walk*	yolke	> y[oulk]e	*yolk*

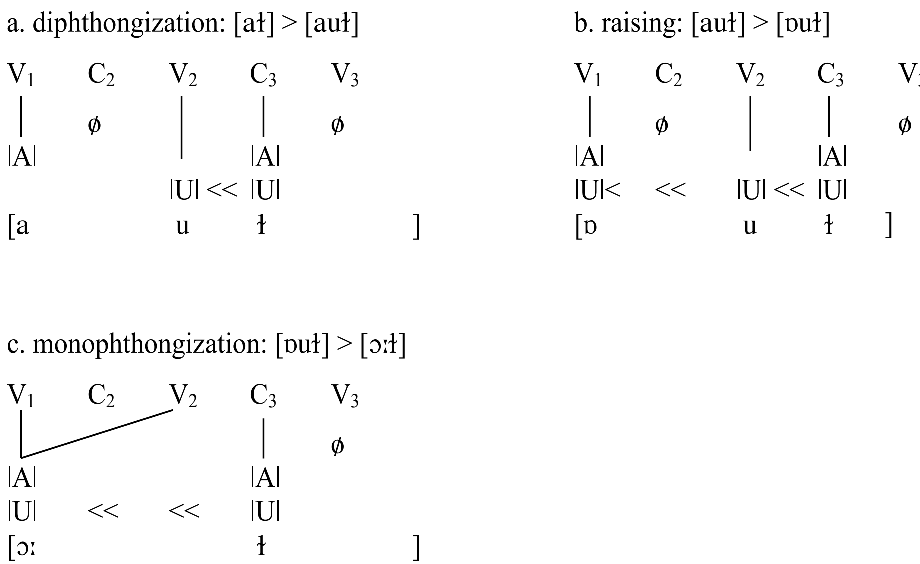
First note that the lateral is velarized and as such contains the resonance element |U|. The latter spreads to the preceding nuclear slot which results in the development of a glide before the liquid. Moreover, the lateral in (4) occurs in a weak position, i.e. before the empty nucleus (word-finally or pre-consonantally). Thus, the logic behind this change is the same as described above, i.e. the velarized lateral

6 Apart from the element |U| defining velarity, the velar fricative in (3) contains an additional element |H| - a regular representation of English voiceless fricatives.

7 Liquid prevocalization does not occur after front vowels as they contain the element |I| and the combination of |U I| in the English vocalic system seems to be banned.

undergoes disintegration and its elements evacuate from the endangered position to a neighboring one. To be more precise, the change consists in the leftward migration of the element |U| which results in various (later) modifications such as vowel raising and lengthening via the intermediate diphthongization stages: [a] > [au] > [ɒu] > [ɔː] (4a) and diphthongization or lowering and diphthongization: [o] > [ɔu] > [əʊ] and [u] > [ɔu] > [əʊ] (4b). The former development is represented on the example of *walke* > *w*[aulk] 'walk' in (5) below.

(5)



First, in (5a) the element |U| responsible for the velarization of the lateral spreads leftwards and docks onto the preceding vocalic slot V_2[8]. At this stage a new diphthong is formed. Next, in (5b) the element |U|, while still being linked to the nucleus (V_2), continues its migration to the left and becomes part of the first vowel containing |A|. In consequence both elements get fused and appear as the back mid vowel [ɒ]. Finally, in (5c) the element |U| gets delinked from V_2 and is intercepted by V_1. The whole expression, i.e. |AU|, spreads to the by now emptied V_2 and winds up as a long monophthong [ɔː]. To sum up, [ɫ] unloads the resonance element |U| in a prosodically weak position. This element docks onto the preceding nuclear position but this is not the end of the road, because in some cases it migrates even further left reaching the first nucleus.

[8] The glide is assigned to a newly formed nucleus which is incorporated in the representation to make room for the incoming |U| (see Kijak, 2010:420).

We hope that the analysis proposed above, brief as it was, proves conclusively that velar-to-labial changes, e.g. glide formation and diphthongization before the velarized lateral with some accompanying vocalic modifications, among many others, can be given a uniform account by postulating the element |U| in the melodic make-up of velars/velarized consonants. In what follows, we discuss one example of obstruentization found in Polish with some reference to other Slavic languages and Hungarian. The discussion in the following section is based on Cyran (2013).

3. Obstruentization in Polish (Cyran, 2013)

In this section, we discuss a proposal to explain the historical [w] > [v/f] shift in Slavic first put forward in Cyran & Nilsson (1998) and later developed in Cyran (2013). Their solution sheds new light on the peculiar behavior of the labiodental fricative [v] in voicing phenomena and phonotactic distribution not only in Polish (Kuryłowicz, 1952, Gussmann, 1981), Russian (Andersen, 1969, Hayes, 1984, Gussmann, 2002) or Slovak (Rubach, 1993), but also in other languages, e.g. Hungarian (Siptár, 1996, Szigetvári, 1998, Blaho, 2002), Irish (Cyran, 1997), Welsh (Cyran, 2010), Dutch (van der Torre, 2003, van Oostendorp, 2007) and Frisian (Visser, 1997), among others. Moreover, the analysis points to the possibility of element addition in a situation when the element is locally absent.

The point of departure for Cyran & Nilsson's (1998) analysis is the development of the Common Slavic **w* in various Modern Slavic languages. The relevant facts are illustrated in (6).

(6) Reflexes of the historical glide [w] in Slavic languages (Cyran 2013:114).

a.	b.	c.	d.	e.	
E.Ukr.	*St. Ukr.*	*St. Slovak*	*St. Czech*	*St. Polish*	
[woda]	[voda]	[voda]	[voda]	[voda]	'water'
[twij]	[tvij]	[tvoj]	[tvuːj]	[tfuj]	'your'
[wpasty]	[wpasty]	[fpadnuːc]	[fpadnowt]	[fpaɕt͡ɕ]	'fall into'
[sliw]	[sliw]	[slow]	[slof]	[swuf]	'words, gen.pl.'
[ɫawka]	[ɫawka]	[laːwka]	[laːfka]	[wafka]	'bench'

The examples in (6) demonstrate that the labial glide may be preserved in all positions, e.g. East Ukrainian, or it may evolve into an obstruent in certain contexts only, e.g. Standard Ukrainian. Being an obstruent it can alternate with its voiceless counterpart, that is, [f], while still alternating with the glide, e.g. Standard Slovak. Finally, in languages like Standard Polish or Czech the original labial glide does not appear in alternations and its voiced fricative reflex alternates with the voiceless counterpart. Furthermore, while in Standard Polish the labial fricative reflex, that is, [v] behaves like a regular obstruent in that it undergoes final devoicing and voice assimilation (progressive and regressive), in Czech it does not appear in progressive voice assimilation, e.g. [tvuːj] 'your'. These observations lead to a conclusion that **w* in Standard Polish reached an extreme point, at least from the voicing point of view, as it consistently interprets [v] as an obstruent. Quite uncontroversially, the shift [w] > [v/f] has been considered as an example of fortition, and as such should consist in the addition of consonantal material[9]. However, it is not always possible to find a local donor of the material, e.g. Polish [voda] 'water', even worse, the supposed fortition occurs in both strong and weak positions, e.g. Polish [tfuj] 'your' and [swuf] 'words, gen.pl.' respectively. Accordingly, Cyran (2013) indicates that the shift [w] > [v] cannot be explained as the addition of the noise element |H| because there is no local source for this spreading. Moreover, the addition of |H| would yield |UH|, which represents a voiceless fricative rather than the desired voiced one. Therefore the analysis he proposes includes three stages. The first step is a shift in the phonetic interpretation of |U| in strong positions. Although, at this stage, both [w] and [v] are realizations of the same element |U|, in strong positions this element acquires additional interpretational feature – friction. In other words, the innovation consists in the phonetic realization of |U| with more effort. With time this purely interpretational shift reached another stage – phonologization, which consists in the assignment of phonetic details to phonological representation. It follows that the alternation [w] ~ [v] is reflected phonologically as |U| ~ |$\underline{\text{U}}$|, the former occurs in weak positions while the latter in strong ones. This step may explain the sonorant-like behaviour of [v] in many languages like, for example, Russian. In this language obstruent clusters are uniform with respect to voicing not only within words but also across word boundaries, e.g. *kni*[ʒok]*a* 'book, dim. gen. pl.' vs. *kni*[ʃk]*a* 'nom. sg.' and *bra*[t]*a* 'brother, gen. sg.' vs. *bra*[d] [g]*ovorit* 'brother speaks' respectively[10]. However, the voicing uniformity does not hold when the next word begins with a vowel, a sonorant and the labial fricative [v], e.g. *bra*[t] [r]*abotaet* 'the brother works' vs. *vku*[s] [vʲ]*ina* 'the taste of wine'. Similarly, the solution [w] > [v] = |U| > |$\underline{\text{U}}$| can be applied to languages from outside the Slavic family. In Hungarian, for example, obstruent clusters agree in voicing and their voicing property is determined by the last obstruent in the sequence, e.g. *la*[bd]*a*, 'ball', *smara*[kt], 'emerald'. Moreover, word-initial consonant clusters invariably consist of an obstruent followed by a sonorant. Both constraints, however, are violated by the labial fricative [v], e.g. *cson*[tv]*elö*, 'bone marrow', and [tv]*iszt* 'twist' or [kv]*arc* 'quartz'[11]. Such peculiarities can be solved in a straightforward way if we rep-

[9] It has been proposed that in Slavic the surface [v] is derived historically from the glide /w/, see Flier (1972). For the analysis of Polish [w] > [v/f] facts see Kuryłowicz (1952), Gussmann (1981, 1992) and Bethin (1992).
[10] The Russian examples have been collected from Gussmann (2002:194).
[11] The Hungarian data come from Blaho (2002).

resent [v] as |U̲|, that is, a headed resonance element. It means that [v] cannot undergo devoicing or propagate voicing simply because phonologically it is a sonorant, i.e. it is not specified for the laryngeal element |L|[12].

The final stage in the development [w] > [v] > [v/f] is reached when the friction and voicing included in |U̲| are assigned a phonological status, that is, |H| and |L|, hence, |U̲| > |UHL|. This step may explain the situation in Slovak which allows for two kinds of alternations [w] ~ [v] and [v] ~ [f]. Cyran & Nilsson (1998) conclude that in Slovak two representations of [v] exist side by side, i.e. |U̲| and |UHL|. The same line of reasoning is applied to Polish and Czech data. The former language is assumed to have undergone the change completely. Finally, it is worth mentioning that this proposal is able to capture the fact why obstruentization of sonorants typically results in voiced obstruents (Kenstowicz, 1994).

Summing up, the solution discussed above contributes to the explanation of some historical changes which lack a local source or trigger. Secondly, it accounts for the double nature of some consonants which fluctuate between a sonorant and an obstruent. Finally, it emphasizes the fact that what is phonetically one segment may have two different phonological representations in the same system or in two different systems. The take home lesson from the discussion here is that the internal structure of segments should follow a thorough and in-depth analysis rather than being accepted a priori.

4. Conclusions

It is our hope that some more clarity have emerged from this rather brief and general discussion concerning current phonological models. It has been demonstrated that such models can cope with traditional problems much better than previous ones or draw researchers' attention to phenomena previously overlooked. Thus, we have seen that velar-to-labial changes can be given a uniform account by postulating the element |U| in the melodic make-up of velars/velarized consonants and by explaining the trigger of the process – the weak position. Moreover, we have pointed to the explanatory power of ET which can account for cases of contextually unmotivated developments or a double nature of certain consonants. According to the view that each theoretical framework contributes to understanding of (traditional) problems and lets researchers look at phonological phenomena from a different perspective, it is unquestionably profitable to devote one's effort, time and energy to explore new theoretical solutions.

[12] The fact that sonorants do not play any active role in various voice phenomena is captured in Element Theory by a simple fact that sonorants are not specified for the laryngeal elements – they are spontaneously voiced. In other words, they lack the elements |H| and |L| from the internal composition.

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